

PUBLIC VERSION

**UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

ECOFACOR, INC.,

Plaintiff,

v.

ECOBEE, INC.,

Defendant.

Case No. 6:20-cv-00078-ADA

**JURY TRIAL DEMANDED**

ECOFACOR, INC.,

Plaintiff,

v.

ECOBEE, INC.,

Defendant.

Case No. 6:21-cv-00428-ADA

**JURY TRIAL DEMANDED**

**LEAD CASE**

**PLAINTIFF'S OPPOSITION TO DEFENDANT'S MOTION  
FOR PARTIAL SUMMARY JUDGMENT**

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## I. INTRODUCTION

As to **Issues #2 and 3**, summary judgment is inappropriate because genuine disputes of material fact exist as to ecobee's induced, contributory, and willful infringement of the '186, '100, and '890 Patents (together, the "Asserted Patents"). ecobee had knowledge of infringement, through at least EcoFactor's two complaints against ecobee in the International Trade Commission ("ITC") and ecobee's competitive relationship with EcoFactor. Additionally, EcoFactor's experts will show that ecobee lacks a reasonable basis that its products do not infringe and that the Accused Products do not have substantial non-infringing uses.

As to **Issue #4**,<sup>1</sup> Defendants' motion on subject matter eligibility targeting the '327 patent rests on flawed legal and factual premises that were already presented, and squarely rejected, by *two different judges* on related EcoFactor patents. Those judges held that a largely identical patent specification and similar patent claims with many overlapping elements reflect "improvements in energy efficient HVAC systems" and their respective control systems. Ex. 2 (1185 Public Init. Det.) at 423-426. Even more to the point, Judge Shaw held that those related claims are not abstract under *Alice* Step One because they demonstrate a "*significant departure and improvement over the existing electronic thermostat control systems.*" *Id.*<sup>2</sup> Likewise, at Step Two, the claims were inventive because they "use alleged new and *nonconventional techniques.*" *Id.* The same logic and basic holdings apply in this case. And as with the '327 patent asserted in this case, ecobee's arguments fail at each level of the *Alice* two-step framework. Applying controlling law to any

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<sup>1</sup> ecobee's motion addressing the '327 patent was previously denied in Case No. 6:20-cv-00075-ADA ("the -75 Action") involving ecobee's co-defendant, Google LLC. ecobee and Google submitted the same joint brief on this issue, and the Court denied the motion in the -75 Action, which was tried to a jury in early 2022. *See* -75 Action, Dkt. No. 111 (joint brief signed by ecobee) & Dkt. No. 190 (order indicating resolution of motion). EcoFactor disagrees that there is even reason to re-submit the same motion for a decision in ecobee's case but, in any event, has re-produced its prior opposition in this brief.

<sup>2</sup> All emphasis in quoted material has been added unless otherwise noted.

reasonable review of the asserted patents, it is clear that the asserted claims—*eighteen* in total, across *two* different patent specifications—are not directed to abstract ideas. Instead, they are directed to technical improvements to then-existing technology, namely those associated with electronically programmable thermostats and other HVAC controls. *Alice Corp., v. CLS Bank Int’l*, 573 U.S. 208, 217, 134 S. Ct 2347, 189 L.Ed.2d 296 (2014) (claims are patent-eligible as a matter of law if “they improve an existing technological process”). Thus, they are patent-eligible as a matter of law. *Id.*

As to **Issue #1**, summary judgment is inappropriate because genuine disputes of material fact exist as to ecobee’s assertions that the Asserted Claims of the ’100 Patent lack written description support for the evaluating and determining steps. ecobee’s choice to ignore disclosures in the ’100 Patent—disclosures which its own expert acknowledges contain teachings related to the very issues they contend lack written description—fails to meet their burden here. By contrast, the ’100 Patent’s disclosures demonstrate that the evaluation and determination steps have written description support, confirmed through EcoFactor’s expert’s explanation of the teachings of the preferred embodiment.

## **II. ISSUES #2 AND #3: ECOBEE INDIRECTLY AND WILLFULLY INFRINGED THE ASSERTED PATENTS**

### **A. Response To ecobee’s Statement Of “Undisputed” Material Facts**

#### **1. ecobee Had Pre-Suit Knowledge Of Infringement Of The Asserted Patents.**

(P1)<sup>3</sup> On October 23, 2019, EcoFactor placed ecobee on notice of infringement of its portfolio of patents, which includes the Asserted Patents. *See* Ex. 3 at 1 (’186 Patent); Mot. at Ex.

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<sup>3</sup> Citations with the form (P##) refers to EcoFactor’s facts, and (D##) refers to the corresponding alleged “fact” in ecobee’s Motion.



2 ('100 Patent); Ex. 4 at 1 (indicating that the '890 Patent was filed on April 3, 2019, published on September 19, 2019, and issued March 10, 2020). EcoFactor did so by filing a complaint against ecobee in the ITC, accusing it of infringing U.S. Patent No. 8,131,497 (the "'497 Patent"), among three other patents. *See* (D38). The '497 Patent is the grandparent of the '186 Patent. *See* Ex. 3 at 1.

(P2) On February 25, 2021, EcoFactor placed ecobee on additional notice of infringement of its portfolio of patents. EcoFactor filed another complaint against ecobee in the ITC, accusing it of infringing four other patents. *See* (D46). The accused products at issue in both ITC cases are also at issue in the present case. *See* (D41), (D49).

(P3) Prior to the commencement of any litigation, ecobee was intimately aware of the Asserted Patents and how its products would infringe through its competitive relationship with EcoFactor. ecobee was a direct competitor of EcoFactor at least as early as 2009. *See, e.g.*, Ex. 5 (ecobee00111403). As EcoFactor's competitor, ecobee [REDACTED] [REDACTED]. *See, e.g.*, Ex. 5; Ex. 6 (ecobee00111404); Mot. at Ex. 8 (Carradine Tr.) at 69:3-9, 64:13-25, 76:5-7; Mot. at Ex. 9 (Trinh Tr.) at 18:15-18, 214:18-215:13. ecobee [REDACTED] [REDACTED]. *See, e.g.*, Mot at Ex. 8 at 18:15-18, 214:18-215:13; Mot. at Ex. 7 at 55:24-25, 61:16-62:11, 62:19-25. ecobee attended the same industry conferences as EcoFactor. *See* Mot. at Ex. 7 at 56:1-17 (ecobee employee stating that he met EcoFactor's ex-CEO at the Smart Energy Summit conference), 62:19-25. At these industry conferences, ecobee and EcoFactor both had speakers participating in multiple overlapping years, providing additional opportunities for ecobee to intimately familiarize itself with EcoFactor's innovations. *See* Ex. 7 (ECODCT\_0235002).

(P4) ecobee was also familiar with the work of EcoFactor’s inventor, John Steinberg and Scott Hublou (named inventors of the patents-at-issue), citing to some of their work in ecobee’s own patent applications. *See* Ex. 8 (ECODCT\_0234980) at [0003]; Ex. 9 (ECODCT\_0234999) (ecobee application citing to U.S. Patent No. 7,848,900 (the parent of the ’186 patent (*see* Ex. 3))).

(P5) Thus, in light of the facts above, EcoFactor generally disputes ecobee’s statements at (D30)-(D36), (D60)-(D61). EcoFactor also specifically disputes (D31) because ecobee misrepresented the facts. EcoFactor clearly stated that it “denies that ecobee lacked pre-suit notice” of the ’186 and ’890 patents. *See* Mot. at Ex. 9 at RFAs 16-19.

## **2. ecobee Has No Reasonable Basis To Believe It Did Not Infringe The Asserted Patents.**

(P6) The record does not demonstrate that ecobee had a reasonable belief that that the accused products did not infringe the Asserted Patents. Plaintiff’s infringement expert will explain at trial that ecobee infringes the Asserted Patents. *See, e.g.*, Ex. 10 (de la Iglesia Rpt.) ¶¶ 96-154 (explaining ecobee’s infringement of the ’186 Patent), 237-386 (explaining ecobee’s infringement of the ’890 Patent), 462-528 (explaining ecobee’s infringement of the ’100 Patent), 595-605 (explaining ecobee’s direct and indirect infringement). EcoFactor’s validity expert will explain at trial that the Asserted Patents are not invalid. *See generally* Ex. 11 (Palmer Rpt.) ¶¶ 122-798, 800-854.

(P7) ITC cases do not carry preclusive effect. *See EcoFactor, Inc. v. ecobee, Inc.*, No. 6:22-cv-33-ADA, Dkt. No. 46 at 7 (W.D. Tex. Aug. 22, 2022) (stating that ITC investigations have “no preclusive effect on the Asserted Patents”). In any event, the Asserted Patents at issue here have never been asserted before the ITC. *See generally* Mot. at Exs 11, 16. And the ITC has never adjudicated any patents related to the ’890 Patent. *See generally* Mot. at Exs 13, 15, 18, 19.

(P8) Thus, in light of the facts above, EcoFactor generally disputes ecobee’s statements at (D35)-(D53).

**3. ecobee’s Accused Products Do Not Have Substantial Non-Infringing Uses.**

(P9) Plaintiff’s infringement expert will explain at trial that ecobee’s Accused Products do not possess substantial non-infringing uses with respect to the Asserted Patents. See Mot. at Ex. 1 (de la Iglesia Rpt.) ¶¶ 602, 605. Mr. de la Iglesia explains that ecobee’s accused products “are especially made and adapted for use in the infringing system, and they are not capable of substantial noninfringing uses with respect to the geofencing, Time of Use, and Community Energy Savings/Demand Response optimizations that infringe the asserted claims.” See Mot. at Ex. 1 ¶ 605. He explains that “[t]he geofencing, Time of Use, and Community Energy Savings/Demand Response features infringe as designed in their normal operation, and there are no substantial non-infringing uses of these features of the ecobee thermostats.” See Mot. at Ex. 1 ¶ 605.

(P10) Thus, in light of the facts above, EcoFactor generally disputes ecobee’s statements at (D54)-(D58). EcoFactor also specifically disputes (D55). Mr. de la Iglesia contended that the Accused Products infringe “as designed in their normal operation.” See Mot. at Ex. 1 ¶ 605. ecobee argues that a “substantial” non-infringing use is using the Accused Products without internet. However, that argument is unsound, considering consumers pay a lot of money precisely to purchase a smart thermostat, the features of which, are effectively utilized through connecting it to the internet. Thus, using the Accused Products without internet, cannot be a “substantial” non-infringing use. EcoFactor further specifically disputes (D56)-(D58), because ecobee fails to demonstrate that the uses it identifies are “substantial.” Mr. de la Iglesia’s expected testimony also undermines (D56)-(D58). See Mot. at Ex. 1 ¶ 605.

## B. Argument

### 1. ecobee's Induced Infringement Of And Willfully Infringed The Asserted Patents.

Summary judgment is inappropriate because genuine disputes of material fact exist as to ecobee's induced and willful infringement of the Asserted Patents. With respect to induced infringement, "[l]iability under § 271(b) requires knowledge that the induced acts constitute patent infringement." *In re Bill of Lading Transmission & Processing Sys. Pat. Litig.*, 681 F.3d 1323, 1339 (Fed. Cir. 2012). Willful blindness also suffices. *See Global-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 769-71 (2011). Willful blindness requires that "(1) [t]he defendant must subjectively believe that there is a high probability that a fact exists and (2) the defendant must take deliberate actions to avoid learning of that fact." *Id.* at 769. Knowledge "can be inferred from circumstantial evidence." *Warsaw Orthopedic, Inc. v. NuVasive, Inc.*, 824 F.3d 1344, 1347 (Fed. Cir. 2016). With respect to willful infringement, "[u]nder *Halo*, the concept of 'willfulness' requires a jury to find no more than deliberate or intentional infringement." *SRI Int'l, Inc. v. Cisco Sys., Inc.*, 14 F.4th 1323, 1330 (Fed. Cir. 2021). Willfulness can be established with evidence "that the [accused infringer] acted despite a risk of infringement that was 'either known or so obvious that it should have been known to [it].'" *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1371 (Fed. Cir. 2017). "Willful infringement is a question of fact ...." *Polara Eng'g Inc. v. Campbell Co.*, 894 F.3d 1339, 1353 (Fed. Cir. 2018). "[W]illfulness is an issue for the jury, not the district court." *Exmark Mfg. Co. Inc. v. Briggs & Stratton Power Prod. Grp., LLC*, 879 F.3d 1332, 1353 (Fed. Cir. 2018). The answer to the question of intent "must be inferred from all the circumstances." *See WCM Indus., Inc. v. IPS Corp.*, 721 F. App'x 959, 970 (Fed. Cir. 2018).

Here, when the facts and inferences are viewed in the light most favorable to EcoFactor, there is genuine dispute of material fact that ecobee knew of, or was at least willfully blind to, its pre-suit induced and willful infringement of the Asserted Patents. EcoFactor placed ecobee on notice of infringement of its portfolio of patents, which include the Asserted Patents, when it filed complaints against ecobee in the ITC two separate times, accusing it of infringing a total of eight patents. *See* (P1)-(P2). EcoFactor's complaint accusing ecobee of infringing the grandparent of the '186 Patent, placed ecobee on particular notice of its infringement of the '186 Patent itself. *See* (P1). The accused products at issue in both ITC investigations are also at issue in this case. *See* (P1). These facts are sufficient to avoid summary judgment. *See Raytheon Co. v. Cray, Inc.*, No. 216CV00423JRGRSP, 2017 WL 1362700, at \*4 (E.D. Tex. Mar. 13, 2017) (denying a motion to dismiss indirect infringement and willfulness allegations where the plaintiff merely provided defendant with "information concerning its patent portfolio"); *Personalized Media Commc'ns, LLC v. Apple, Inc.*, No. 215CV01366JRGRSP, 2021 WL 2696464, at \*4 (E.D. Tex. Feb. 19, 2021) (denying summary judgment of no indirect infringement or willfulness where the defendant was placed on notice of infringement as to the plaintiff's portfolio of patents); *Kewazinga Corp. v. Microsoft Corp.*, 558 F. Supp. 3d 90, 120 (S.D.N.Y. 2021) (denying summary judgment of no willfulness where the defendant was placed on notice of infringement of related patents to the patent-in-suit).

But that's not all. ecobee engaged in highly competitive acts with respect to EcoFactor and the technologies it invented. As EcoFactor's competitor, ecobee [REDACTED]. *See* (P3). ecobee [REDACTED]. *See, e.g.*, (P3). ecobee attended the same industry conferences as EcoFactor. *See* (P3). At these industry conferences, ecobee and EcoFactor both had speakers

participating in multiple overlapping years, providing additional opportunities for ecobee to intimately familiarize itself with EcoFactor's innovations. *See* (P3). ecobee's citations to EcoFactor's patents or patent applications further demonstrate its knowledge of EcoFactor's inventions and inventors. *See* (P4). Evidence of pre-suit knowledge of infringement a patent can be circumstantial, and EcoFactor has supplied more than sufficient evidence. *See Kewazinga Corp. v. Microsoft Corp.*, 558 F. Supp. 3d 90, 119 (S.D.N.Y. 2021); *Warsaw Orthopedic, Inc. v. NuVasive, Inc.*, 824 F.3d 1344, 1347 (Fed. Cir. 2016).

ecobee's citations to *Finjan* and *Meetrix* are distinguishable at least because *Finjan* and *Meetrix* did not pertain to pre-suit notice in the form of an actual infringement lawsuit filed against the defendant. *See Finjan, Inc. v. Juniper Networks, Inc.*, No. C 17-05659 WHA, 2018 WL 905909, at \*1 (N.D. Cal. Feb. 14, 2018); *Meetrix IP, LLC v. Cisco Sys., Inc.*, No. 1-18-CV-309-LY, 2018 WL 8261315, at \*2 (W.D. Tex. Nov. 30, 2018). Here, EcoFactor provided notice of infringement of its portfolio, through, not one, but **two**, lawsuits against ecobee. *See* (P1)-(P2). The filing of a lawsuit against a defendant, puts a defendant on a heightened level of awareness of the patents its being accused of infringing, as well as how it infringes other family members of those patents, and any other patents in the plaintiff's portfolio. Because the stakes are much higher with a lawsuit, the ecobee had strong motivation to understand EcoFactor's entire portfolio.

The record does not demonstrate that ecobee had a reasonable belief that that the accused products did not infringe the Asserted Patents. Plaintiff's infringement expert will explain at trial that ecobee infringes the Asserted Patents. *See* (P6). EcoFactor's validity expert will explain at trial that the Asserted Patents are not invalid. *See* (P6). ITC cases also do not carry preclusive effect. The particular claims of the Asserted Patents at issue here have not been previously litigated before the ITC. *See* (P7). Whether ecobee's beliefs were reasonable is a question of fact best suited

for the jury to resolve, and the Court should not engage in the weighing the evidence itself. *See, e.g., Egenera, Inc. v. Cisco Sys., Inc.*, 547 F. Supp. 3d 112, 129 (D. Mass. 2021) (“Because intent and willfulness are questions of fact to be determined on consideration of the totality of the circumstances, the court cannot, on this record, find as a matter of law that [the defendant] held a reasonable belief of noninfringement). Thus, there is also a genuine dispute of material fact that ecobee knew of, or was at least willfully blind to, its post-suit induced and willful infringement of the Asserted Patents. Defendant’s citations to *Aguirre* and *ZapFraud*, are not persuasive, in light of this Court’s recent rulings. *See, e.g., SpaceTime3D, Inc. v. Apple Inc.*, No. 6-22-CV-00149-ADA, 2022 WL 16858515, at \*2 (W.D. Tex. Nov. 10, 2022) (“[T]he filing of the Complaint establishes the notice required for a plausible inference of willfulness.”).

Summary judgment is not proper as to pre-suit or post-suit induced and willful infringement.

## **2. ecobee Contributorily Infringed The Asserted Patents.**

Summary judgment is inappropriate because genuine disputes of material fact exist as to ecobee’s contributory infringement of the Asserted Patents. “[C]ontributory infringement requires knowledge of the patent in suit and knowledge of patent infringement.” *Commil USA, LLC v. Cisco Sys., Inc.*, 575 U.S. 632, 639 (2015). Willful blindness can satisfy the knowledge requirement for contributory infringement, even in the absence of actual knowledge. *See Warsaw Orthopedic, Inc. v. NuVasive, Inc.*, 824 F.3d 1344, 1347 (Fed. Cir. 2016).

For the reasons described above, when the facts and inferences are viewed in the light most favorable to EcoFactor, there is genuine dispute of material fact that ecobee knew of, or was at least willfully blind to, its pre-suit and post-suit contributory infringement of the Asserted Patents. *See* (P1)-(P8).

Additionally, when the facts and inferences are viewed in the light most favorable to EcoFactor, there is a genuine dispute of material fact that there are no substantial non-infringing uses of the Accused Products for the Asserted Patents. *See* (P9)-(P10). Plaintiff's infringement expert will explain at trial that ecobee's Accused Products possess substantial non-infringing uses such that they infringe the Asserted Patents. *See* (P9). This directly refutes ecobee's expert's testimony. *See* (P10). This is a classic, battle-of-the-experts scenario, that this Court should not prematurely decide at the summary judgment stage. *See Crown Packaging Tech., Inc. v. Ball Metal Beverage Container Corp.*, 635 F.3d 1373, 1384 (Fed. Cir. 2011) ("Where there is a material dispute as to the credibility and weight that should be afforded to conflicting expert reports, summary judgment is usually inappropriate.").

Thus, summary judgment is not proper as to pre-suit or post-suit contributory infringement.

### **III. ISSUE #4: THE ASSERTED CLAIMS OF THE '327 PATENT RECITE PATENT-ELIGIBLE SUBJECT MATTER**

#### **A. Response To ecobee's Statement Of "Undisputed" Material Facts**

As detailed below, EcoFactor disagrees with ecobee's characterization of key facts as being undisputed and maintains that summary judgment should be denied as to the '327 patent.

#### **B. Argument**

##### **1. Under Controlling Precedent, The Asserted Claims Of The '327 Patent Are Not Directed To Any Abstract Ideas, As A Matter Of Law.**

##### **a. Under Any Reasonable Interpretation, The Asserted Claims Are Not Directed To Abstract Ideas Under § 101.**

Applying the law to any reasonable reading of the '327 patent, it is clear that the claims are not directed to abstract ideas. The specification confirms the claimed inventions improved existing electronic thermostat and HVAC control systems in the mid-to-late 2000s by solving problems that were *unique to that technology area*.



For instance, the specification makes clear that “conventional” electronic thermostats and other HVAC controls had “no mechanism by which it might take the thermal mass of the structure into account, but thermal mass significantly affects many parameters relating to energy efficiency.” *See, e.g.*, Ex. 12 (’011 Provisional<sup>4</sup>) at 4-5. As the named inventors realized, due to variations in thermal mass—and the limitations in conventional “electronic digital” programmable thermostats—the “significant theoretical savings” they may one day be able to achieve “are rarely realized.” *Id.* at 1-2. And understanding the thermal mass for each unique home is a key predicate to providing optimized schedules, evaluating HVAC performance, and other features described in the patent. *Id.* at 1-6. But, like the mechanical thermostats that preceded them, the then-existing programmable thermostat and electronic HVAC controls had no way of dealing with these problems. They did not have a suitable way to determine thermal mass and, still worse, generally had a limited number of different input signals, usually just “ambient temperature and the preset desired temperature.” *Id.* at 1-2.

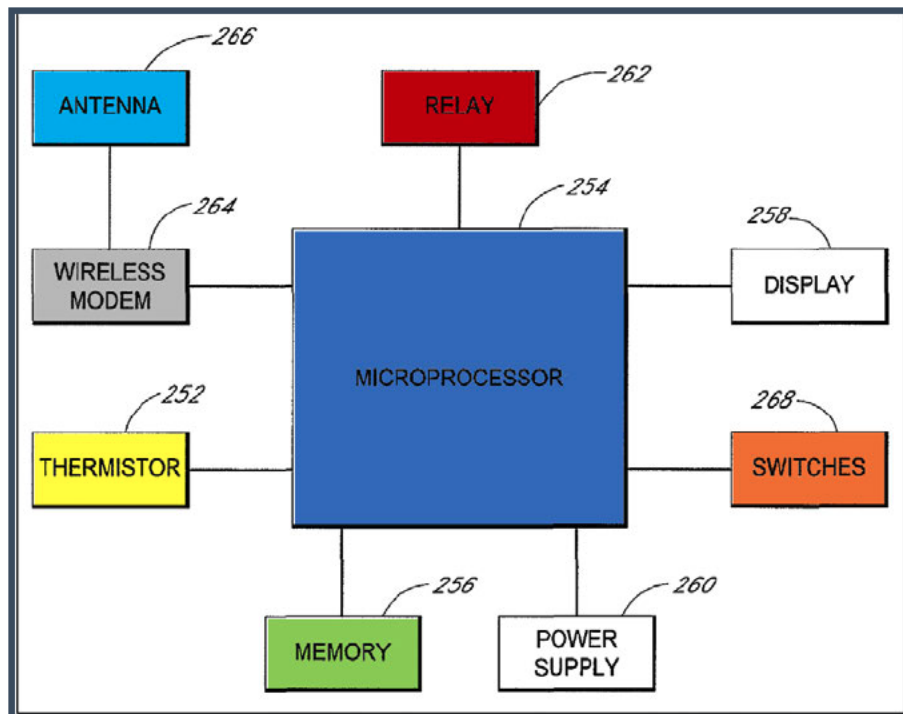
Faced with the above shortcomings, the named inventors spent months of research and development to finally derive a solution: an unconventional electronic HVAC control system with a networked thermostat with a temperature sensor and a database. *Id.* at 5-8. This system would finally overcome the limitations in the conventional electronic thermostat HVAC control systems at the time. That is, using a networked thermostat HVAC control system to measure temperature in a building and reporting said temperature measurements as well as the status of an HVAC control system over the Internet. *Id.* at 14-18. And to better deal with the thermal mass problems of the day, their system would also obtain outside temperature information. *Id.* at 7, 14-18. The

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<sup>4</sup> The ’327 patent claims priority to and incorporates by reference the entirety of Provisional Application No. 60/994,011, attached as Exhibit 12. *See* ’327 patent at 1:15-17.

server then determines the estimated rate of change of internal temperature over time by performing comparisons with actual specific data it receives from specified sources. It does so in order to (depending on the patent) either determine whether the HVAC is on or else control the operational status of the HVAC. *Id.* at 14-18. From this data, the system learns enough about its environment to account for each structure's potentially different thermal properties—and improve the monitoring and control of the HVAC and its temperature settings.

And with dozens of columns of patent teachings and figures, the inventors taught the world various embodiments that achieve these inventive solutions. As an exemplary figure in the patents shows, the inventors designed a new system that electronically controlled the wireless connections and antenna, along with a thermistor, memory, and an electronic relay and switches to control the output of the heating or cooling:



'327 patent at Fig. 4 (annotated). Unlike the conventional systems at the time, these claimed systems were now potentially capable of numerous diagnostic and controlling functions beyond those of a standard thermostat at the time of the invention. *Id.* at 6:60-7:2.

Importantly, the claims reflect this as well. Under any review of the actual claimed inventions of the '327 patent, even in their most basic form, they are directed to ***computer-networked*** HVAC control systems configured to:

- compare inside temperatures to outside temperatures received **from a source other than the HVAC**, to estimate **a rate of change** in inside temperature in response to the outside temperature and **provide a signal to reduce electricity demand** based on a determined **demand reduction request**

*See* Ex. 13 (Palmer Rpt.) at 58-63.

The asserted claims are thus expressly directed to technical improvements to then-existing technology, namely those associated with electronically programmable thermostats and other HVAC controls. *E.g., Alice*, 573 U.S. at 217 (claims are patent-eligible as a matter of law if “they improve an existing technological process”). The asserted claims are therefore patent-eligible as a matter of law. *Id.*

The Supreme Court’s decision in *Diamond v. Diehr* is instructive and contradicts the premises on which Defendants’ motion rests. In that seminal decision, the Supreme Court confirmed the patent-eligibility of a claimed method directed to using the “Arrhenius equation to calculate the optimal cure time [of rubber] using, among other variables, the internal temperature of [a rubber] mold.” *Thales Visionix, Inc. v. United States*, 850 F.3d 1343, 1347 (Fed. Cir. 2017) (citing *Diamond v. Diehr*). Per the Court, this invention was patent-eligible because it improved upon shortcomings specific to “prior art molding methods.” It did this by “constantly measur[ing] the actual temperature inside the mold, re-calculating the ideal cure time, and automatically” ending the process when the ideal cure time equaled the actual time elapsed. *Id.* And all this was

true even though the claims included and made reference to a “well-known mathematical” formula calculation. *Id.* To help courts draw a distinct line between non-abstract ideas and abstract ones, the Court noted that the case before it stood in contrast to the one it decided years earlier, in *Parker v. Flook*, where claims requiring the use of a specific equation were held unpatentable because they simply used a computer to provide a better “method of calculating alarm limit values” *not specific to any particular technology*. *Parker v. Flook*, 437 U.S. 584, 594-95 (1978). In that case, the mathematical “alarm limit value” formula itself was an “abstract idea” that was not directed to solving any technical problems specific to any particular technology area. And thus, a “computer implementation was purely conventional” because “the ‘use of computers for ‘automatic monitoring-alarming’” was “well known.” *Alice*, 573 U.S. at 222 (quoting *Flook*, 437 U.S. at 594). Like the patent and claims in *Diehr*—and unlike those in *Flook*—the asserted patent claims here provided technical solutions to shortcomings that were specific to a particular technical field, making them patent-eligible.

And the Federal Circuit in *Thales Visionix v. United States*, applied the same logic and distinctions required by *Diamond v. Diehr* to reverse a lower court’s finding of patent-ineligibility. In that case, the Federal Circuit looked to the full intrinsic record to determine the claimed advance under Step One. *Thales*, 850 F.3d 1343, 1346-50 (Fed. Cir. 2017). Based on that review, the court held that the claims were “directed to” a system for electronic measurement of the “orientation of [] tracked object” based on the data obtained from using “two inertial sensors” and a processor that “utilizes a mathematical equation” to calculate the object’s orientation by using the data from the sensors. *Id.* This claimed solution aimed to “eliminate[] many ‘complications’ *inherent in*” the particular technical field, namely, the field of determining positing and orientation of objects. *Id.* Citing *Diamond v. Diehr*, the court held that the claims could not be abstract. That was because

they were not merely directed to using a computer to apply “mathematical equations” for determining the relative position of a moving object. *Id.* Rather, they were directed to “systems ... that use inertial sensors in a non-conventional manner to reduce errors” inherent to the technical field measuring relative position and calculating the objects relative orientation. *Id.* Like the claims in *Thales*, the asserted claims here are also not abstract. Instead, the EcoFactor patent claims are directed to providing *technical* solutions to then-existing *technical* problems.

**b. ecobee’s Analysis Fails As A Matter Of Law At *Alice* Step One Because It Does Not Account For The “Claimed *Advance*” Based On The *Actual* Claimed Elements.**

While the above *Alice* Step-One claim summary leaves out well over half of the claimed words, it still captures the essence of the claimed advance. Yet, for its part, ecobee ignores all of the underlined elements, which are among the key elements to distinguish the ’327 patent from any other patent involving HVAC systems. The intrinsic record contradicts ecobee’s improper and legally flawed framing of the claimed inventions.

Patent eligibility under Section 101 “is a question of law, based on underlying facts.” *SAP Am., Inc. v. InvestPic LLC*, 898 F.3d 1161, 1163 (Fed. Cir. 2018). Under controlling precedent, courts analyze patent eligibility under the two-step *Alice* framework. *Alice*, 573 U.S. at 217. Under Step One of the *Alice* inquiry, courts must ask “whether the claim, as a whole, is ‘directed to’ [] an abstract idea.” *Ancora Techs., Inc. v. HTC Am., Inc.*, 908 F.3d 1343, 1347 (Fed. Cir. 2018). As the Federal Circuit has repeatedly stated, the *Alice* formulation contemplates that “the first step of the inquiry is a meaningful one, *i.e.*, that a substantial class of claims **are not** directed to a patent-ineligible concept.” *Enfish LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334-36 (Fed. Cir. 2016). Thus, for example, under this step, a patent claim is not abstract, as a matter of law, if it presents a “specific solution to [an] existing technological problem.” *Data Engine Techs., LLC v. Google, LLC*, 906 F.3d 999, 1009 (Fed. Cir. 2018).

The Federal Circuit has made clear that the “directed to” analysis must at least account for and examine each invention’s “***claimed advance***” in the art according to the record. *Ancora Techs.*, 908 F.3d at 1347-49; *see also Kononklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1150 (Fed. Cir. 2019) (“At step one of the *Alice* framework, we ‘look at the focus of the claimed advance over the prior art to determine if the claim’s character as a whole is directed to excluded subject matter.’”). Skipping over this analysis is legal error, as the claimed advance “allow[s] for the improvement realized by the invention.” *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016). Moreover, this determination may be made by reviewing the intrinsic record of the patent, but other evidence also may be considered. *CardioNet, LLC v. InfoBionic, Inc.*, 955 F.3d 1358, 1373-74 (Fed. Cir. 2020) (reversing district court’s oversimplification of claims under Step One decision and finding that a holding that the claims are not abstract as a matter of law did “not require a review of the prior art or facts outside of the intrinsic record”).

Significantly, while any determination of what claims are “directed to” necessarily involves some simplification of the claimed limitations as a whole, courts “must be ***careful to avoid oversimplifying the claims*** by looking at them generally and failing to account for the specific requirements” of the claims. *McRO*, 837 F.3d at 1313 (internal quotation marks omitted). Doing so will lead to reversible error. *Id.* Thus, the “directed to” inquiry, “cannot simply ask whether the claims ***involve*** a patent-ineligible concept, because essentially every routinely patent-eligible claim involving physical products and actions ***involves*** a law of nature and/or natural phenomenon—after all, they take place in the physical world.” *Id.* (emphasis in original); *see also Mayo Collaborative Servs. v. Prometheus Labs. Inc.*, 566 U.S. 66, 71 (2012) (cautioning against oversimplification and ignoring requirements because “all inventions at some level embody, use,

reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas”). Rather, the “directed to” inquiry applies a stage-one filter to claims based on whether “*their character as a whole is directed to excluded subject matter.*” *Enfish*, 822 F.3d at 1334-36.

In a strained effort to wrongly cast the claims as abstract, *ecobee* mischaracterizes what they are “directed to” by stripping them of their “claimed advance” and, in so doing, also stripping them of their character as a whole.

For instance, for the ’327 patent, the broadest independent claim reads:

1. A system for controlling the operational status of an HVAC system comprising:  
 at least one thermostat associated with a structure that receives temperature measurements from inside the structure, the structure conditioned by at least one HVAC system, the thermostat having at least a first setting stored therein;  
 one or more servers located remotely from the structure, the one or more servers configured to receive measurements of outside temperatures from at least one source other than the HVAC system,  
 the one or more servers are further configured to communicate with the thermostat via a network, wherein the one or more servers receive inside temperatures from the thermostat and compares the inside temperatures of the structure and the outside temperatures over time to derive an estimation for the rate of change in inside temperature of the structure in response to outside temperature,  
 the one or more servers are further configured to receive a demand reduction request and determine whether the structure is associated with demand rejection request, and  
 based on the determination that the structure is associated with the demand reduction request, the one or more servers are further configured to send a signal to the thermostat to change the setting to a second setting to reduce electricity demand by the HVAC system.

As demonstrated above, under any reasonable review of the intrinsic record, the most basic summary of the claimed advance for this patent would at least include:

- compare inside temperatures to outside temperatures received **from a source other than the HVAC**, to estimate **a rate of change** in inside temperature in response to the outside temperature and **provide a signal to reduce electricity demand** based on a determined **demand reduction request**

See Ex. 13 (Palmer Rpt.) at 58-63.

But ecobee contends that the claims are all directed to merely “changing the thermostat setting in response to a request to reduce energy usage.” Mot. at 33. Though ecobee picks out and isolates single words and phrases from the specification, without any context from even the paragraphs those words and phrases originate from, ecobee never once acknowledges what the patent itself says it intends to improve over the prior art, let alone the entire claimed advance. The bare-bones version ecobee does present does not even acknowledge whether the “changing” is done automatically, let alone acknowledge: (i) that thermostats are networked, where the outside temperatures must come from (i.e., a source other than the HVAC); (ii) that the system must estimate a rate of change; or (iii) that the system itself must provide a signal to reduce electricity demand, based on a determined demand reduction request. But deliberately ignoring all of those core elements ignores **how** the claims expressly achieve their claimed advance. Defendants thus strip the very character of the claimed inventions and renders the patent virtually indistinguishable from *any* HVAC patent. That is error. After all, “essentially every routinely patent-eligible claim involving physical products and actions *involves* a law of nature and/or natural phenomenon—after all, they take place in the physical world.” *McRO*, 837 F.3d at 1313; *see also CardioNet*, 955 F.3d at 1373-74 (reversing district court’s oversimplification of claims under Step One).

**c. Contrary To ecobee’s False Assertions, The Claims Entail Much More Than Purely Conventional Components.**

In the hopes of making its false assertions stick, ecobee also contends that the ’327 patent itself says it is made up of entirely conventional items. Not so.

In fact, the exact opposite is true. The patent specification repeatedly demonstrates how the claimed inventions were designed to improve the conventional programmable thermostats at the time of the invention. *See, e.g.*, ’327 patent at Background, 1:03-62 (describing the limitations in



conventional “electronic digital” programmable thermostats—the “significant theoretical savings” they may one day be able to achieve “are rarely realized”).

ecobee also resorts to taking deposition quotes from an EcoFactor inventor out of context, to claim that he indirectly suggested his claimed inventions were purely conventional. Mot. at 20-21. But what ecobee does not show is the testimony in which the inventor was asked the question directly. And when he was asked, he stated the obvious: the claimed wireless-networked HVAC controls were absolutely not conventional:

1	Q	Right. And in 2007, the control systems	15:58:06
2		and the HVAC systems, the conventional ones at the	15:58:10
3		time weren't all connected to the -- to a wireless	15:58:16
4		network or anything like that, fair?	15:58:21
5	A	Correct. It was very much an anomaly to	15:58:23
6		have any sort of internet-connected device inside of	15:58:26
7		your home or inside of a building.	15:58:30

Ex. 14 (Hublou Depo Tr.) at 194:1-7.

ecobee’s failed arguments run contrary to the intrinsic and extrinsic record. They also run contrary to the Federal Circuit law, because any claimed invention’s compatibility with conventional systems does not render it abstract anyway. *Uniloc USA, Inc. v. LG Elecs. USA, Inc.*, 957 F.3d 1303, 1309 (Fed. Cir. 2020). Indeed, in nearly every case in which claims are held to be patent-eligible, the claims include known components, like the internet or a computer server or processor. It is just that, as with this case, the *combination* of those elements prove unconventional or else those components are *configured* to work in an unconventional way.

**d. The Claims Cannot Reasonably Be Done On Pen And Paper Or Through Mental Processes.**

Under their improperly stripped-down version of the claims, Defendants argue that the asserted claims can be done with pen and paper or in the human mind. *E.g.*, Mot. at 22, 34. That is ludicrous. Every asserted claim requires, among many other things, a *networked* HVAC control system, various temperature or other *sensors*, and a networked *server or processors* configured to receive outside temperatures or other digital from a source other than the HVAC, in order to either derive an estimate rate of change of inside temperature to outside temperature. The claims plainly cannot be done merely with “pen and paper.” *See also* Ex. 13 (Palmer Rpt.) at 53, 58-63. Indeed, even ecobee’s stripped-down version of the claims cannot be performed mentally.

And besides, this is the wrong question to ask in any event. Otherwise, if ecobee were right, cases like *Thales* or *Diamond v. Diehr*—which involved known parts and known mathematical equations—would have turned out the other way. ecobee is wrong, and their unreasonable analyses do not change years of controlling law proving them wrong.

**e.      Though Not Necessary For A Step One Analysis, The Claims Do  
“Explain” How The System Performs Its Claims.**

Without any citation or support, ecobee also suggests that, under Step One, the claims do not explain how the system performs its analysis. As an initial matter, this entire line of reasoning is irrelevant, even if it were true. That is because “[c]laims need not articulate the advantages of the claimed combinations to be eligible.” *Uniloc USA, Inc.*, 957 F.3d 1303. Put simply, “[s]pecifications teach. Claims claim.” *SRI Int’l v. Matsuhita Elec. Corp.*, 775 F.2d 1108, 1121 n.14. (Fed. Cir. 1995).

At any rate, a review of the properly construed (albeit improperly stripped down version of the) claims under ecobee’s Step-One analysis shows that its line of reasoning is indeed false. The claims certainly describe how they achieve their claimed advance in sufficient detail—Defendants just ignore it. For instance, the ’327 patent requires that the claims networked HVAC

control system compare inside temperatures to outside temperatures received from a source other than the HVAC, to estimate a rate of change in inside temperature in response to the outside temperature and provide a signal to reduce electricity demand based on a determined demand reduction request. *See also* Ex. 13 (Palmer Rpt.) at 58-63.

## **2. ecobee Also Cannot Meet Its Heavy Burden Under *Alice* Step Two.**

Because ecobee fails at Step One, the Court need not consider Step Two. But Step Two also exposes ecobee’s legal and factual flaws, as ecobee likewise cannot meet its burden, e.g., because the claims recite an undoubtedly ***unconventional*** electronic HVAC control system. *See, e.g., Cellspin Soft, Inc. v. Fitbit, Inc.*, 927 F.3d 1306-07 (Fed. Cir. 2019) (must consider “whether the claimed elements—individually and as an ordered combination—recite an inventive concept.”); *Diamond v. Diehr*, 450 U.S. 175, 188 (1981) (“In determining the eligibility of Defendants’ claimed process for patent protection under § 101, their claims must be considered as a whole. It is inappropriate to dissect the claims into old and new elements”). ecobee’s analysis runs contrary to precedent, which requires considering the entire claim as an *ordered combination*. Even worse, ecobee’s statements on the claim elements it parses and dissects are based on nothing more than conclusory attorney argument.

### **a. The Intrinsic Record Alone Disproves ecobee’s Arguments And Demonstrates That The Claimed Inventions Were Unconventional.**

The ’327 patent itself proves the opposite of what ecobee wrongly contends. For instance, the specification makes clear that “conventional” electronic thermostats and other HVAC controls had “no mechanism by which it might take the thermal mass of the structure into account, but thermal mass significantly affects many parameters relating to energy efficiency.” *See, e.g.*, Ex. 12 (’011 Provisional) at 4-5. As the named inventors realized, due to variations in thermal mass—and the limitations in conventional “electronic digital” programmable thermostats—the

“significant theoretical savings” they may one day be able to achieve “are rarely realized.” *Id.* at 1-2.

As described above, the claimed networked HVAC control system inventions solved the shortcomings in the art by claiming an unconventional, *computer-networked* HVAC control system, with all the other specific claimed advances. Indeed, ecobee has nearly no analysis acknowledging the ordered combination of claim elements. That ordered combination of all the claim elements are inventive—and ecobee’s contradicted attorney argument does not change any of that, let alone entitle ecobee to summary judgment of invalidity. ecobee cannot meet its burden and its motion fails.

**b. The Extrinsic Evidence Further Dooms ecobee’s Meritless Arguments.**

Though the intrinsic record alone is enough to demonstrate that the claimed electronic HVAC controls were not “conventional” and, thus, defeat ecobee’s Motion, EcoFactor’s extrinsic evidence only takes all this one step further and makes it even clearer. As contemporaneous EcoFactor-related studies make clear, EcoFactor’s patented solution, however, was able to better deal with the unique thermal problems of different building structures. It did so by *unconventionally* using the HVAC control as a networked sensor and collecting specific information from numerous sources, including those external to the HVAC system, to make various claimed determinations that make the systems operate in a highly improved manner:

The keys to EcoFactor’s patent-pending service are the data we collect and what we are able to do with it. Traditional programmable thermostats may be thought of as glorified switches. EcoFactor gains access to a wealth of data by using the thermostat as a networked sensor. Like conventional unconnected devices, EcoFactor-enabled thermostats measure temperature. But EcoFactor combines that data with information from other sources to create a highly accurate window into the performance of the building and its HVAC system, as well as into the behavior and preferences of the occupants. By logging temperature and HVAC cycling behavior as reported by the thermostat every 60 seconds, EcoFactor is able to determine the “dynamic signature” of the home – its ability to store and reject heat under changing conditions. By logging all of the inputs to the system – including the changing preferences of the occupants as expressed each time the “up” and “down” buttons are pressed – we are able to learn about the preferences and schedules of the occupants, which will allow us to decrease energy consumption without decreasing comfort.

Ex. 15 at v. And for his part, Mr. Hublou confirmed the same in his deposition:

2	Q	And the claim combination that we discussed	15:59:26
3		in connection with the '488 patent, that wasn't --	15:59:31
4		the combination itself that you invented wasn't	15:59:35
5		something that was conventional at the time of the	15:59:38
6		patent application in 2007, fair?	15:59:41
7	A	Very fair.	15:59:44
8	Q	And that's also very fair of all the other	15:59:45
9		patent claims that were put in front of you today,	15:59:48
10		correct?	15:59:51
11	A	That is correct.	15:59:52

Ex. 14 (Hublou Depo Tr.) at 195:2-11.

ecobee’s motion fails at numerous level and should be denied. At minimum, the above evidence creates numerous issues of fact under *Alice* Step Two, which precludes summary judgment. *Aatrix Software, Inc. v. Green Shades*, 882 F.3d 1121, 1125-27 (Fed. Cir. 2018).

#### IV. ISSUE #1: THE SPECIFICATION OF THE '100 PATENT CONTAINS ADEQUATE WRITTEN DESCRIPTION

##### A. Response To ecobee’s Statement Of “Undisputed” Material Facts

EcoFactor objects to ecobee’s statement of undisputed material facts as follows. ecobee’s statements at (D7)-(D9) do not accurately reflect the claim requirements they purport to summarize. *See* ’100 Patent at cl. 1, 9. Further, ecobee’s statements at (D13)-(D20), and (D22)-(D28) are either incomplete or are not facts at all. For example, (D13) is ecobee’s argument that the “specification of the ’100 Patent does not describe the Evaluating and Determining Limitations required by each of the ’100 Asserted Claims.” Mot. at 6. This is not a fact, but rather is the requested relief of ecobee’s motion. As another example, (D16) does not accurately summarize Dr. Palmer’s opinions. The disclosures of the ’100 Patent provide adequate written description support for the Asserted Claims, the facts of which are discussed in detail below.

## **B. Argument**

The Asserted Claims of the ’100 Patent have written description support for the evaluation and determination steps. ecobee fails to demonstrate otherwise because ecobee ignores portions of the disclosure related to the preferred embodiment—disclosures its own expert acknowledges are relevant to the issues here. According to 35 U.S.C. ¶ 282, a patent is presumed valid. Therefore, ecobee has the burden of establishing by clear and convincing evidence that the ’100 Patent fails to comply with the written description requirement. *See Hynix Semiconductor Inc. v. Rambus Inc.*, 645 F.3d 1336, 1351 (Fed. Cir. 2011); *Intirtool, Ltd. v. Texar Corp.*, 369 F.3d 1289, 1294 (Fed. Cir. 2004). To prevail on its motion for summary judgment, ecobee must demonstrate that the ’100 Patent fails to “reasonably convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (“*Ariad*”). This determination is a question of fact. *Centrak, Inc. v. Sonitor Techs., Inc.*, 915 F.3d 1360, 1365 (Fed. Cir. 2019). And, as ecobee notes, “[a] court must view the evidence and draw factual inferences in a light most favorable to the nonmoving party



opposing summary judgment.” Mot. at 22 (citing *Impossible Elecs. Techniques v. Wackenhut Protective Sys., Inc.*, 669 F.2d 1026, 1031 (5th Cir. 1982) (“*Impossible*”)); *see also Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986). Here, ecobee fails to demonstrate that there are no disputed materials facts, and that the Asserted Claims of ’100 Patent lack written description support. Each of these shortcomings is fatal to their motion.

As an initial matter, ecobee’s purported arguments regarding lack of written description are not written description arguments at all. ecobee argues that the “’100 Patent fails to describe *how* the required Evaluating and Determining Limitations are to be performed, *how* (or if) the evaluation step impacts the determination step, and *how* the claimed outside temperature measurements and predicted rate of change parameters are to be utilized.” Mot. at 23. Yet, the Federal Circuit has “recognized that the *enablement requirement*, which requires the specification to teach those skilled in the art *how* to make and use the claimed invention without undue experimentation, *is separate and distinct from the written description requirement.*” *Nuvo Pharms. (Ireland) Designated Activity Co. v. Dr. Reddy's Lab'ys Inc.*, 923 F.3d 1368, 1382 (Fed. Cir. 2019). For this reason alone, ecobee’s motion is baseless and should be denied. Nevertheless, ecobee's motion fails to establish that they are entitled to summary judgment, especially in light of its heavy burden of proving invalidity by clear and convincing evidence.

### **3. ecobee’s Own Expert’s Opinions Demonstrate That Disputed Facts Exist.**

ecobee's motion should be denied because both parties’ experts analyze overlapping portions of the specification and reach different conclusions, demonstrating that genuine disputes exist regarding written description. As ecobee notes, the written description requirement is fulfilled when “the four corners of the specification . . . describe[s] an invention understandable to that *skilled artisan* and show that the inventor actually invented the invention claimed.” *Ariad* at 1351.

Here, both parties' experts are skilled artisans. *Compare* Ex. 11 (Palmer Report) ¶ 73 *with* Ex. 16 (D'Andrade Report) ¶ 29. Yet, each of these skilled artisans reaches different conclusions regarding the disclosure of the '100 Patent. *Compare* Mot. at 6 (citing Mot., Ex. 26 (D'Andrade Report) ¶¶ 182-190 in support of the proposition that "the '100 Patent does not describe the Evaluating and Determining Limitations required by each of the '100 Asserted Claims") *with* Mot., Ex. 5 (Palmer Report) ¶ 96 (stating that "the claims of the '100 patent are supported by adequate written description."). This alone demonstrates that there is a genuine dispute as to a material fact, and ecobee's motion should be denied.<sup>5</sup> *Bausch & Lomb Inc. v. Vitamin Health, Inc.*, 13-CV-6498, 2016 WL 4120657, at \*6 (W.D.N.Y. Aug. 1, 2016) (denying summary judgment with respect to lack of written description where, in light of the competing expert testimony submitted, "reasonable minds may differ as to whether a person of ordinary skill in the art would be able to recogni[z]e the claimed invention based on an objective inquiry into the contents of the patent's specifications"); *M2M Solutions LLC v. Motorola Solutions, Inc.*, 2016 WL 70814, at \*14 (D. Del. Jan. 6, 2016) (denying summary judgment for lack of written description for the same reasons); *Viasat, Inc. v. Space Sys./Loral, Inc.*, Case No. 3:12- CV-00260-H(WVG), 2013 WL 12061802, at \*3 (S.D. Cal. Oct. 29, 2013) (denying summary judgment because the court cannot make credibility determinations at the summary judgment stage and because the parties presented conflicting expert testimony regarding issues of material fact).

And here, ecobee cannot demonstrate that EcoFactor's "stor[y] ... is "blatantly contradicted by the record," such that this "court should not adopt that version of the facts." Mot. at 22 (quoting *Scott v. Harris*, 550 U.S. 372, 380-81 (2007) ). While ecobee asserts that Dr. Palmer

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<sup>5</sup> To the extent ecobee contends that Dr. Palmer's opinion is not fully supported by the specification, this goes to the credibility or the weight of the evidence, and is better suited for cross-examination, not a motion for summary judgment.



merely “attempts to cobble together a theory that the ’100 Patent satisfies the written description requirement by pointing to various unrelated snippets across the ’100 Patent,”<sup>6</sup> noting that “[a] patent owner cannot show written description support by picking and choosing claim elements from different embodiments that are never linked together in the specification” (Mot. at 26, n.5 (citing *Flash-Control, LLC v. Intel Corp.*, No. 2020-2141, 2021 WL 2944592, at \*3 (Fed. Cir. July 14, 2021))), ecobee fails to appreciate that Dr. Palmer’s opinions rely on the patent’s background and its teachings regarding the *preferred embodiment*. Indeed, ecobee ignores that the ’100 Patent specification discusses the “currently *preferred embodiment*” beginning at 6:64 and does not refer to any other embodiment until 9:48. ’100 Patent at 6:64-9:48. The portions of the specification related to the preferred embodiment found in columns 6-9 encompass Figures 3, 4, 5, *6a*, *6b*, 7, *8a*, *8b*, and *8c*—the very disclosures Dr. Palmer relies upon. Furthermore, the ’100 Patent includes a “Detailed Description of the *Preferred Embodiment*.” ’100 Patent at 3:58-5:45. This portion of the specification provides detailed teachings of the interplay between the hysteresis band and compressor delays settings, which implicate the patent’s teachings regarding the rate of change. The background of the ’100 Patent and the portions of the specification discussing the preferred embodiment establish written description support for the evaluation and determination steps.

Further, while ecobee argues that the ’100 Patent lacks written description support by singling out the word “evaluate” and pointing out that it only appears in the Abstract, this is nothing more than a straw man argument. ecobee admits that “the description requirement does not demand ... that the specification recite the claimed invention in *haec verba*.” Mot. at 23 (citing *Ariad*, 598 F.3d at 1351). Instead, written description hinges on whether the teachings of the specification

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<sup>6</sup> ecobee did not challenge Dr. Palmer’s written description opinions through a motion to strike or *Daubert* motion. To do so now in the context of a summary judgment motion is improper.

“allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.” *Ariad* at 1351 (internal citations omitted). And while ecobee purports to take issue with Dr. Palmer’s identification of Figures 6, 7 and 8 along with portions of the specification as providing written description support for both the evaluating and determining steps, ecobee ignores that its *own expert* was able to recognize that at least Figures 7 and 8 and the corresponding portions of the specification contain teachings about the evaluation and determination steps, even if those teachings don’t recite the claim language verbatim. *See* Mot., Ex. 26 (D’Andrade Report) ¶¶ 185, 187.

ecobee’s expert’s recognition that certain portions of the specification contain disclosures related to the claims demonstrates that the ’100 Patent “reasonably convey[s]” to a person of ordinary skill “that the inventor had possession of the claimed subject matter as of the filing date.” Mot. at 27 (quoting *Ariad* at 1351). Indeed, both parties’ experts agree that Figure 7, along with the corresponding portions of the specification, disclose teachings related to the evaluation and determination steps recited in the Asserted Claims. *See* Mot., Ex. 5 (Palmer Report) ¶ 98; Mot., Ex. 26 (D’Andrade Report) ¶¶ 184-185 (admitting that the ’100 Patent includes “disclosure regarding how either of these evaluation or determination steps are performed.”). Likewise, both parties’ experts acknowledge that Figure 8 discloses details about the results of the evaluation and determination steps. Indeed, according to ecobee’s expert, Figure 8 “illustrate[s] what the inside temperature profile would be with a particular compressor delay setting and environmental condition in effect.” Mot., Ex. 26 (D’Andrade Report) ¶ 187; *see also, e.g.*, Mot., Ex. 5 (Palmer Report) ¶¶ 114-115. These admissions by ecobee’s own expert in his expert report reveal that ecobee’s arguments here are at odds with their own expert’s opinions. Therefore, ecobee cannot meet its heavy burden, especially in the context of a motion for summary judgement which requires

that all evidence and inferences must be viewed in a light most favorable to the nonmoving party. *Impossible* at 1031.

**4. The '100 Patent Teaches Using Rate Of Change And Outside Temperatures In The Evaluation And Determination Steps.**

And even setting aside ecobee's expert's admissions on this point, ecobee feigns ignorance regarding the disclosures in the '100 Patent which implicate the use of the predicted rate of change and outside temperatures in the evaluation and determination steps. This does not meet their burden to show that the Asserted Claims of the '100 Patent lack written description support clear and convincing evidence and that ecobee is therefore entitled to summary judgment. ecobee asserts that "[t]he Figure 7 embodiment simply includes a retrieval step," in step 1108. Mot. at 25. However, step 1108 contemplates evaluating "user preferences" which may include "conditions under which the homeowner has elected to permit hysteresis band changes, the maximum length of compressor delay authorized, etc." '100 Patent 8:49-55. As the specification explains, the settings for the hysteresis band and the maximum length of compressor delay will impact the functioning of the system such that a setting for either the hysteresis band or the maximum length of the compressor delay will impact the functioning of other settings. *See, e.g.*, '100 Patent at 3:61-4:67; 8:58-9:44. As the specification notes, a compressor delay that is less than the off time for the system during normal conditions "will have no effect on the cycling of the system." *Id.* at 4:20-67. However, if the compressor delay is "increased" such that the delay would force the system to remain off when it would have otherwise automatically turned on, the effect on the system will be indicated by the "waveform" which "will change significantly." *Id.* Thus, as the specification explains, various conditions will be evaluated before determining in step 1110 which settings to apply that would have impacts to the operations of the system. And consistent with this explanation in the specification, as a simple matter of common sense, a POSITA would understand that when

any two parameters intersect, they will be evaluated before making a determination. This demonstrates that ecobee has not shown the patented invention lacks written description support by clear and convincing evidence.

ecobee also asserts that “the ‘parameters needed to specify the compressor delay routine’ that are retrieved in step 1108 neither include any predicted rates of change nor relate to any delay for a ventilation system.” Mot. at 25.<sup>7</sup> Based on this argument, ecobee further asserts that “step 1110’s determination of the appropriate compressor delay settings does not disclose the claimed determination step,” and that “[o]ne shows that one is ‘in possession’ of the invention by describing the invention, with all its claimed limitations, not that which makes it obvious.” *Id.* (quoting *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997)). However, these assertions fail for multiple reasons.

First, as discussed above, step 1108 evaluates parameters, including “the maximum length of compressor delay authorized, etc.” ’100 Patent 8:49-55. Thus, the parameters needed to specify a delay routine clearly relate to a delay for a ventilation system.

Second, ecobee fails to appreciate that the list of parameters evaluated in step 1108 is a non-exhaustive list which can include other parameters. *See* ’100 Patent at 8:49-55 (reciting a list, ending with “etc.”).

Third, even if the list were exhaustive, the specific parameters listed implicate the predicted rate of change. Indeed, the ’100 Patent teaches that the parameters contemplated by step 1108 include “conditions under which the homeowner has elected to permit hysteresis band changes,

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<sup>7</sup> ecobee asserts that certain figures “discuss only compressor delays and not ventilation system delays as required by the claims of the ’100 patent.” Dkt. No. 71, n.6. However, the claims do not require a particular type of delay, such as the “ventilation system delay[]” ecobee asserts. Rather the claims recite “a delay.” *See* ’100 Patent, claims 1 and 9.

the maximum length of compressor delay authorized, etc.” ’100 Patent 8:49-55; *see also* Ex. 16 (D’Andrade Report) ¶ 116 (admitting that “the compressor delay routine can be determined by ‘user preferences’” such as those discussed above). These hysteresis band and length of compressor delay conditions can be affected through the patented invention’s use of a predicted rate of change.

For example, the background of the invention reveals that “[t]he hysteresis band ... is now commonly designed to ***hold the desired setpoint*** within a range of +/-1 degree Fahrenheit.” *Id.* at 2:60-63. ecobee's expert likewise explains that “[a] typical pattern for cooling will include a band (i.e., the hysteresis band) of permissible temperatures centered on the temperature setpoint, where the HVAC system will turn off when the temperature falls a prescribed level below the setpoint and turns on when the temperature reaches a prescribed level above the setpoint.” Ex. 16 (D’Andrade Report) ¶ 114. Likewise, the ’100 Patent explains that the patented invention can “***hold[] the desired future inside temperature as a constraint*** and us[e] the ability to predict the rate of change to determine when the HVAC system must be turned on in order to reach the desired temperature at the desired time.” ’100 Patent 8:20-38.

As another example, the hysteresis band results in a “waveform” which is impacted by “several factors, including the difference between ***inside*** and outside ***temperatures***, the ***thermal performance*** of the structure being conditioned, and the capacity of the HVAC system.” *Id.* at 3:64-4:4; *see also* Ex. 16 (D’Andrade Report) ¶ 114. The ’100 Patent explains that “[b]ecause server 106 logs the ***temperature readings from inside*** each house (whether once per minute or over some other interval), as well as the timing and duration of air conditioning cycles, database 300 will contain a history of the ***thermal performance*** of each house.” ’100 Patent 8:20-38. Further, “[b]ecause the server will also log these inputs against other inputs including time of day,

humidity, etc. the server will be able to predict, at any given time on any given day, the rate at which inside temperature should change for given *inside and outside temperatures*,” unlocking the ability to “predict the rate of change to determine when the HVAC system must be turned on in order to reach the desired temperature at the desired time.” Patent 8:20-38.

As ecobee’s expert further notes:

This serves multiple purposes: keeping the temperature near the setpoint, and also reducing damage to the compressor of the HVAC unit by providing sufficient time for the coolant to re-evaporate, i.e., the compressor delay. The compressor delay will not typically influence the cooling pattern, but “the compressor delay, if sufficiently long enough relative to the ‘natural’ period of the system, will alter both the amplitude and the frequency of the thermal waveform” (’100 Patent at 4:22-25). The compressor delay can have a greater effect on the or cooling pattern when the outside temperature is at relative extremes, as these situations result in a faster approach of the internal temperature to the outside temperature.

Ex. 16 (D’Andrade Report) ¶ 114. These disclosures and ecobee’s own expert’s recitations of the ’100 Patent’s teachings clearly indicate that the specification provides written description support for both the evaluation and determination steps, because the system must evaluate the conditions in step 1108 and determine when to turn on and off the system through the use of a delay in step 1110. Thus, as the specification indicates—and as ecobee’s expert’s admits—the evaluation and determination steps take into account the predicted rate of change as well as the outside temperatures to determine the appropriate compressor delay to “reduce energy usage with minimal effect on comfort.” *Id.* at 5:1-6; *see also* Ex. 16 (D’Andrade Report) ¶ 115. This is not clear and convincing evidence that the Asserted Claims lack written description support.

While ecobee purports to take issue with the fact that “the ’100 Asserted Claims’ reference to the predicted rate of change parameter was added during prosecution through amendment years after the original application was filed,” (Mot. at 25) this nothing more than another straw man argument that should be ignored, because written description requirement analyzes the claims at

issue (irrespective of whether they are new or original) and looks to the specification for support. *Ariad* at 1349.

And while ecobee takes issue with EcoFactor’s reliance on Figures 8a-8c, ecobee’s expert acknowledges that Figures 8a-8c confirm that the teachings discussed above perform the very evaluation and determination steps described in the ’100 Patent. Indeed, Figures 8a-8c do much more than “merely describe[] a desired result.” Mot. at 27 (citing *Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671, 682 (Fed. Cir. 2015)). Figures “8(a) through 8(c) illustrate how changes in compressor delay settings affect HVAC cycling behavior by plotting time against temperature” similar to the waveform described in connection with the hysteresis band. ’100 Patent at 8:58-60. ecobee’s expert notes that “[t]hese figures thus illustrate what the inside temperature profile would be with a particular compressor delay setting and environmental condition in effect.” Mot., Ex. 26 (D’Andrade Report) ¶ 187. Dr. Palmer likewise indicates that “Figures 8a-8c illustrate—as Dr. D’Andrade admits—that the inventors were able to describe and depict the impact that their invention would have on the operation of an HVAC system.” Mot., Ex. 5 (Palmer Report) ¶ 117. Thus, Figure 8a-8c confirm that the earlier disclosures in the ’100 Patent demonstrate that the inventors possessed the claimed invention as of the filing date. *Ariad* at 1351. Therefore, the Asserted Claims of the ’100 Patent

ecobee’s attempts to feign ignorance about the disclosures of the ’100 Patent do not meet the standard of showing invalidity by clear and convincing evidence, particularly in light of the standard for summary judgment, and especially when their own expert’s admissions are contrary to the very positions they take here. This demonstrates that ecobee’s motion should be denied. ecobee’s motion for summary judgment seeking a finding that the ’100 Patent lacks written

description support for the evaluating and determining steps is baseless and ignores key teachings from the specification and should therefore be denied.

## V. CONCLUSION

For the foregoing reasons, this Court should (1) deny summary judgment of no indirect infringement as to the Asserted Patents, (2) deny summary judgment of no willfulness as to the Asserted Patents, (3) deny summary judgment of invalidity under 35 U.S.C. § 101 as to the '327 patent, and (4) deny summary judgment of invalidity under 35 U.S.C. § 112 as to the '100 patent.

Date: January 13, 2023

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that counsel of record who are deemed to have consented to electronic service are being served on January 13, 2023, with a copy of this document via the Court's CM/ECF.

/s/ Kristopher R. Davis  
Kristopher R. Davis